

# Water Quantity



**COUNCIL OF THE GREAT LAKES REGION**  
Solving for Sustainability

Having an adequate quantity of water is a cornerstone of business continuity and risk management. By implementing strategies to reduce water use and secure sustainable supply, companies can mitigate operational disruptions, lower energy costs, and meet growing regulatory and stakeholder demands. Acting now on water quantity ensures resilience, competitive advantage, and long-term value creation.

## Water Quantit and Demand in the Great Lakes

### Industrial and Economic Growth

The Great Lakes region is North America’s economic engine, contributing over \$8 trillion to the combined U.S. and Canadian economies. Traditional industries such as steel, automotive, and agriculture have long relied on the region’s water resources. More recently, emerging sectors, including semiconductors, data centers, and biopharma are intensifying water demand, particularly in Ontario, Michigan, and Quebec. As industrial and technological development accelerates, water quantity and allocation pressures are rising, making responsible management, efficiency, and watershed stewardship increasingly critical for long-term economic resilience.

### Climate Change Impacts

Climate models for the Great Lakes basin reveal troubling trends including rising surface water temperatures, declining ice cover, and more frequent extreme weather events such as storms and droughts. These changes exacerbate soil erosion, stormwater runoff, and sewage overflows, power generation potential via hydro power systems placing additional stress on aging water infrastructure and widespread availability to water resources.

### Population Expansion

Rapid population growth is transforming the landscape of the Great Lakes region. This urban and agricultural expansion leads to higher water withdrawals, increased pollution, and greater strain on infrastructure. Without strategic planning, this growth could outpace the region’s capacity to sustainably manage its water resources.

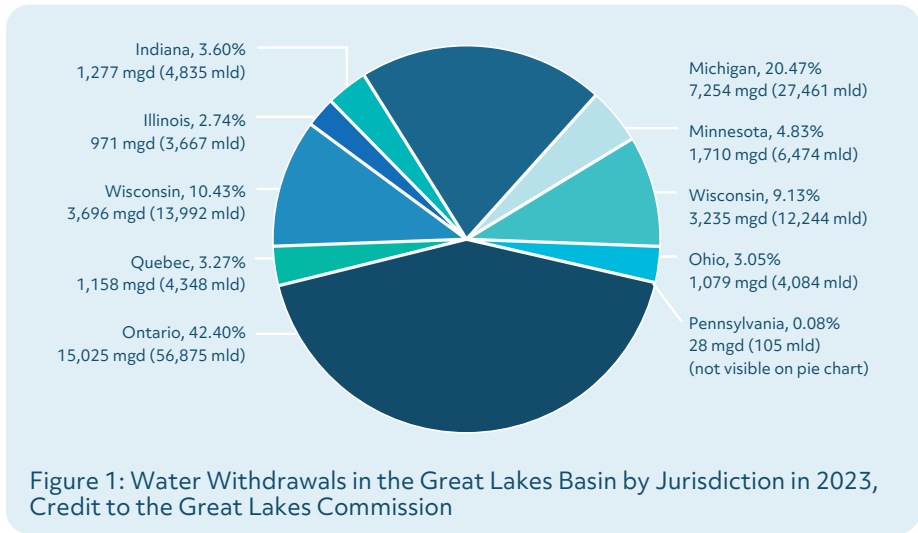


Figure 1: Water Withdrawals in the Great Lakes Basin by Jurisdiction in 2023, Credit to the Great Lakes Commission

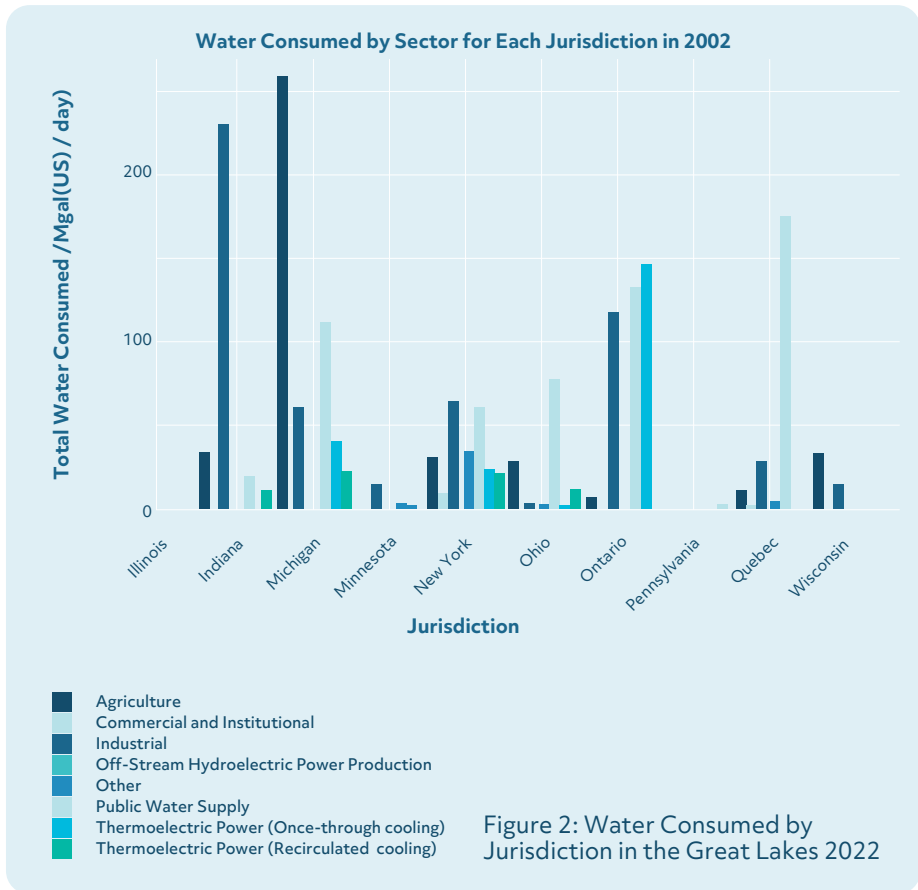


Figure 2: Water Consumed by Jurisdiction in the Great Lakes 2002

# Business Movement and Utility Trends

## Water Pricing and Escalation



Water and wastewater rates are rising unevenly across the region. The lack of standardized reporting and oversight creates uncertainty for businesses attempting long-term planning, impacting investment decisions and complicating efforts to implement water-efficient technologies.

## Corporate Water Stewardship



Companies across the Great Lakes are adopting corporate water stewardship frameworks and Circular Economy of Water practices to reduce freshwater withdrawals, stabilize supply under climate variability, and support shared watershed resilience.

# Strategic Implications

## Infrastructure Investment



To meet the challenges posed by climate change and population growth, adaptive infrastructure investment is essential. Investment in wastewater treatment plants, stormwater systems, and shoreline protection must be prioritized, especially in high-risk and high-growth areas.

## Cross-Border Collaboration



Given the shared nature of the Great Lakes, cross-border collaboration is critical. Harmonizing data collection and reporting standards will improve decision-making and resource management. Joint efforts can also enhance resilience and ensure equitable access to water.

## Business Alignment with Stewardship Goals



Businesses must align with regional stewardship goals to secure long-term water availability. This includes adopting BMPs, engaging in supply chain sustainability, and advocating for policy reforms that support water conservation and reuse.

# Building Resilience in the Great Lakes

As industrial growth, climate variability, and population expansion accelerate across the Great Lakes Basin, businesses face new pressures on water availability and cost stability. The following actions provide practical pathways for companies to reduce freshwater withdrawals, secure reliable supply, and strengthen resilience in a changing water environment.

## Reduce freshwater withdrawals at the facility level

- ❖ Implement water reuse and closed-loop systems for cooling, rinsing, and process water.
- ❖ Deploy advanced metering and real-time monitoring to identify inefficiencies and loss points.
- ❖ Transition from once-through to recirculating systems where feasible to reduce consumptive use.

**Benefit:** Lowers operational water dependency and reduces exposure to future allocation or pricing constraints.

## Integrate water availability into growth and location decisions:

- ❖ Use water availability and withdrawal intensity mapping when planning new facilities or expansions.
- ❖ Prioritize investment in sub-watersheds with demonstrated resilience and avoid areas where demand is already outpacing capacity.
- ❖ Include long-term water pricing scenarios in financial planning to account for utility rate escalation.

**Benefit:** Protects future operational continuity and reduces permitting or community conflict risks.

### Strengthen water stewardship across the supply chain:

- ❖ Work with material suppliers to adopt water stewardship BMPs in process.
- ❖ Include water performance criteria in procurement policies for high-water-footprint inputs.
- ❖ Participate in watershed-scale partnerships that restore riparian buffers, wetlands, and headwater recharge zones.

**Benefit:** Reduces watershed stress beyond the facility fence line and protects supply chain reliability.

### Align corporate water targets with regional stewardship goals:

- ❖ Align reduction and reuse goals with basin objectives and provincial/state water allocation strategies.
- ❖ Track evolving regulations on discharge, stormwater controls, consumptive-use reporting, and groundwater withdrawals.
- ❖ Actively engage in watershed advisory committees, municipal planning processes, and binational collaboration forums.

**Benefit:** Reduces watershed stress beyond the facility fence line and protects supply chain reliability.

